

REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 1-60 are pending in the application.

Applicant thanks the Examiner for the detailed analysis presented in the Office Action.

Claim Rejections under 35 U.S.C. § 112

Claim 11 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 11 is amended to cure the cited deficiency.

Claim Rejections under 35 U.S.C. § 102

Claims 1, 3-5, 7, 9-10, 15-17, 19-21, 23, 29, 31-32, 36-37, 39-42, and 45-48 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,307,541 to Ho et al. (hereinafter, "Ho"). Applicant respectfully traverses the rejection.

Claim 1 defines a mobile device, comprising:

a keypad of number keys, the number keys having associated letters;

a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and generate likely language characters based on the input string;

a display to present the likely language characters for user selection; and

the language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection.

1 As described in one exemplary implementation in the subject application,
2 Applicant's claimed system constructs a phonetic character through input of a
3 string of letters by pressing the corresponding lettered keys of the keypad. For
4 example, to input the phonetic Pinyin text "mi" or "ni", the user would press 6 to
5 input "m" or "n" and then 4 to yield "mi" or "ni". With each input, the mobile
6 phone presents possible language characters. The available choices are indexed by
7 specifically chosen keys that have associated letters of the alphabet that do not
8 follow the phonetic characters already entered. Continuing the above example,
9 after the user enters "64", keys 1, 4, 5, 7, and 9 are chosen as selection keys
10 because the letters associated with digits 4 (GHI), 5 (JKL), and 7 (PQRS) (note
11 that digits 1 and 9 do not have any associated letters) would not follow a Pinyin
12 string of "mi" or "ni". The possible language characters (e.g., Chinese Hanzi
13 characters) are thus assigned to the selection keys 1, 4, 5, 7, and 9. If the user sees
14 a word that he/she wants to input, the user can directly press any one of the keys 1,
15 4, 5, 7, and 9 for immediate selection of the corresponding language character.

16 The remaining keys 2, 3, 6, and 8 continue being input keys because they
17 correspond to phonetic characters that still might be entered. For example,
18 following entry of "mi" or "ni" by pressing keys 6 and 4, the user may be
19 intending to enter the Pinyin text "min" or "nin". Thus, pressing the key 6 again
20 will form a three digit input of 6, 4, 6 for further input of phonetic text to yield
21 "min" or "nin", rather than selection of a converted character.

22 Accordingly, depending upon the user's input, the device dynamically
23 adjusts which keys are used to index possible language characters and which keys
24 are used to receive further phonetic text, thereby allowing differentiation between
25 the user's input of an additional phonetic text and the user's confirmation of an

1 intended converted language character. In this manner, the user need not switch
2 modes between input and selection, as they are seamlessly integrated.

3 Ho does not disclose the claimed mobile device. Ho describes a device that
4 allows input of Chinese characters using a reduced keypad set (e.g., 12 keys on a
5 mobile-phone handset), but the keys merely reference phonetic symbols displayed,
6 in one-to-one correspondence, as part of virtual keyboards depicted on an LCD
7 located above the keypad. The virtual keyboards are arranged in relational layers
8 (e.g., according to the Mandarin Phonetic-Symbol Combination Rules) and used
9 collectively to display a set of phonetic symbols. (*Ho*, Abstract and Summary).
10 There are four layers of virtual keyboards that collectively hold a set of 42
11 phonetic symbols. (*Ho*, col. 4, lines 51-66, and col. 7 line 65 to col. 8, line 38).
12 Only one virtual keyboard is shown on the LCD at a time.

13 When activated, the LCD displays one of the virtual keyboards from the
14 first layer. The user can selectively switch among the three virtual keyboards in
15 the first layer by pressing a key (e.g., "*" key) that maps to a "VK" (virtual
16 keyboard) space in the virtual keyboard on the LCD. After one phonetic symbol is
17 selected from a first-layer virtual keyboard, all subsequent virtual keyboards are
18 presented in accordance with the relations in the Mandarin Phonetic-Symbol
19 Combination Rules (*Ho*, col. 8, lines 39-51).

20 Like the prior art, Ho describes a bi-modal input and selection technique in
21 which the user must switch between an input mode and a selection mode. As
22 shown in Figs. 6 and 7, the input of all desired symbols from the virtual keyboards
23 must be completed prior to searching for and presenting a Chinese character. (*Ho*,
24 Fig. 6, decision block 603, and Fig. 7, decision block 706). Once that input is
25 complete, Ho then retrieves the Chinese character from a database that

1 corresponds to the pre-defined symbols in the virtual keyboards. In this way, Ho
2 requires switching between input mode and selection mode. Thus, Ho effectively
3 represents the very prior art that Applicant sought to overcome.

4 Therefore, Ho does not disclose a mobile device having "a language system
5 to receive an input string entered via the keypad that is representative of one or
6 more phonetic characters" wherein the language system is "configured to facilitate
7 input of the input string and selection of a language character without switching
8 modes between input and selection."

9 The Office argues that the claimed language system is shown in Fig. 6 and
10 accompanying text in col. 12, lines 25-46. (*Office Action*, Page 3). Applicant
11 disagrees. As noted above, Ho's process in Fig. 6 shows that the device first
12 determines whether a complete phonetic-symbol combination is input *prior to*
13 *even finding* a corresponding Chinese character. Decision block 603 in Fig. 6
14 makes this determination. Only after a complete combination is input (i.e., a
15 "Yes" from block 603) does the device then locate the corresponding Chinese
16 symbol from database 410 and present it to the user. Hence, Ho describes a mode
17 switching technique where input must be complete before any selection of a
18 character is possible. After selection, the user then switches back from language
19 character selection to input of the next phonetic character using the virtual
20 keyboards.

21 For this reason, claim 1 is allowable over Ho. Applicant respectfully
22 requests that the §102 rejection be withdrawn.

23 Dependent claims 3-5, 7, 9-10, and 15-16 depend from claim 1 and are
24 allowable by virtue of this dependency. Moreover, these claims recite features
25

1 that, when taken together with those of claim 1, define devices not disclosed by
2 Ho.

3 For example, **dependent claim 3** states "the likely language characters are
4 presented on the display in an index that associates selection keys of the keypad
5 with the language characters so that user entry of a selection key results in a
6 selection of a corresponding language character and user entry of a non-selection
7 key results in further input." Ho does not disclose this feature. Ho's keys are used
8 to select the corresponding symbol in the virtual keyboard. Nowhere does Ho
9 describe having certain keys of the keypad being used for selection of a language
10 character and other keys of the keypad used for further input of the phonetic
11 characters. For this additional reason, claim 3 is allowable over Ho.

12 The Office argues that the index is described in Ho at column 8, lines 39-
13 51. However, this excerpt merely notes that the 12 keys are mapped in one-to-one
14 correspondence with the 12 spaces in the virtual keyboards. (Ho, Fig. 2). But,
15 nowhere in this excerpt does Ho describe that a portion of the 12 keys are
16 associated with possible language characters so that user entry of one of these
17 "selection" keys results in a selection of a corresponding language character, while
18 the remaining portion of the 12 keys are used for further input. Indeed, Ho does
19 not even present a Chinese character until after the entire phonetic combination is
20 input (Ho, Figs. 6 and 7). Thus, Ho's device would never need to allocate certain
21 keys to be selection keys, while retaining other non-selection keys for further
22 input.

23 **Dependent claim 4** requires "the selection keys being selected based on
24 whether the letters associated therewith follow the phonetic characters already
25 entered." Ho fails to disclose this feature. Since Ho uses virtual keyboards for

1 input and not the corresponding letters of the keys, Ho is not concerned with
2 choosing selection keys based on whether the letters associated therewith follow
3 the phonetic characters already entered. For this additional reason, claim 4 is
4 allowable over Ho.

5 The Office cites column 11, lines 47-55 as support. This excerpt discusses
6 Fig. 3 and a relationship between the virtual keyboards and the phonetic symbols,
7 and that within each keyboard, the symbols are assigned a unique key value.
8 Nowhere in this excerpt does Ho discuss the idea of using some of the keys as
9 selection keys and others of the keys as further input keys, nor how the keys would
10 be allocated for these two different tasks.

11 **Dependent claim 7** requires that the language system include "a language
12 model to statistically derive the language characters." Ho does not disclose this
13 feature. The Office points to the virtual keyboard table 420 in support of its
14 rejection. However, this table merely stores the four layers of virtual tables.
15 These tables are pre-constructed according to the Mandarin Phonetic Symbol Set.
16 Ho further utilizes a Chinese-character database 410 that stores a set of Chinese
17 characters and the mapping between each Chinese character and its phonetic-
18 symbol combination based on the Mandarin Phonetic Symbol Set. Once a
19 phonetic symbol is selected, the corresponding Chinese character that maps to the
20 symbol is retrieved from the Chinese-character database 410. (Ho, Fig. 4, col. 11,
21 lines 61-67 and col. 12, lines 25-45). Ho thus describes a relatively straight-
22 forward lookup mechanism. Accordingly, Ho does not employ a language model
23 to "statistically derive the language characters" as required by claim 7. For this
24 additional reason, claim 7 is allowable over Ho.
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1 **Dependent claim 10** recites that “the language system includes a direct
2 key-based search engine that generates the language characters based on a key
3 sequence entered on the keypad in lieu of converting the phonetic characters to the
4 language characters.” Ho does not disclose this aspect. As noted above, Ho
5 employs a set of virtual keyboards. Entering a phonetic character involves a
6 combination of switching among virtual keyboards and selecting items from
7 virtual keyboards. Thus, the key sequence may vary even when entering the same
8 phonetic symbol. Once the phonetic character and tone is selected, Ho employs a
9 mapping to find the corresponding Chinese character in the Chinese-character
10 database 410. Therefore, Ho does not employ “a direct key-based search engine
11 that generates the language characters based on a key sequence entered on the
12 keypad” as required by claim 10. For this additional reason, claim 10 is allowable
13 over Ho.

14 **Dependent claim 15** recites “a scroll control key to present other likely
15 language characters.” Ho does not disclose this aspect. Since Ho uses a pre-
16 defined set of phonetic symbols that map to a pre-defined set of Chinese
17 characters, Ho simply presents the corresponding Chinese character mapping to
18 the selected phonetic symbol. Ho never presents other likely candidates because
19 there are none. With the pre-stored and pre-mapped arrangement (i.e., no
20 statistical modeling), Ho simply performs a retrieval process and presents the
21 retrieved Chinese character(s). There is no need for “a scroll control key to
22 present other likely language characters.” For this additional reason, claim 15 is
23 allowable over Ho.

24 The Office points to buttons 221 and 222 of Ho’s device as disclosing this
25 aspect. While these buttons may be used to perform many functions, there is no

disclosure or teaching in Ho that these buttons are configured as "a scroll control key to present other likely language characters" as required by claim 15.

Independent claim 17 defines a mobile device comprising "a keypad of number keys, the number keys having associated letters of an alphabet" and "a direct key-based search engine that generates possible language characters that are not part of the alphabet based on a key sequence entered on the keypad." For the reasons given above with respect to claims 10, Ho does not disclose a device that utilizes the claimed direct key-based search engine. Applicant respectfully requests that the §102 rejection of claim 17 be withdrawn.

Dependent claims 19 and 20 depend from claim 17 and are allowable by virtue of this dependency. Moreover, these claims recite features that, when taken together with those of claim 17, define mobile devices not disclosed by Ho. For example, **claim 19** requires "an association module that automatically presents the language characters as the user depresses individual keys." Ho does not disclose this feature. As shown in Figs. 6 and 7, Ho does not present the language character until all input of the phonetic symbols and tones from the virtual keyboards is completed. Thus, as individual keys are depressed to step through the virtual keyboards, Ho does not present the language characters. For this additional reason, claim 19 is allowable over Ho.

Independent claim 21 defines a mobile device, comprising:

a keypad of number keys, the number keys having associated letters of an alphabet;

an association module that associates a key sequence with language characters that are not part of the alphabet; and

a display to present the possible language characters as the user depresses individual keys based on the key sequence.

1 Ho does not disclose this device. Since Ho employs a set of virtual
2 keyboards, entering a phonetic character involves a combination of switching
3 among the virtual keyboards and selecting items from certain virtual keyboards.
4 Due to this toggling among the virtual keyboards, the key sequence may vary even
5 when entering the same phonetic symbol. Once the phonetic character and tone is
6 selected, Ho employs a mapping to find the corresponding Chinese character in
7 the Chinese-character database 410. Thus, Ho does not disclose an "association
8 module that associates a key sequence with language characters" as recited in
9 claim 21.

10 Furthermore, Ho does not present the language character until after all of
11 the phonetic symbols and tones from the virtual keyboards have been input. (Ho,
12 Fig. 6, decision block 603, and Fig. 7, decision block 706, and accompanying
13 text). Accordingly, Ho does not disclose "a display to present the possible
14 language characters as the user depresses individual keys based on the key
15 sequence" as recited in claim 21.

16 For these reasons, Ho does not anticipate claim 21 and the §102 rejection
17 should be withdrawn.

18 **Dependent claim 23** depends from claim 21 and is allowable by virtue of
19 this dependency.

20 **Independent claim 29** defines a method comprising "receiving an input
21 string entered via a keypad", "presenting likely language characters based on the
22 input string", and "facilitating continued entry of the input string and selection of a
23 suitable language character without switching modes between input and
24 selection."
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1 As noted above with respect to claim 1, Ho requires mode switching. As
2 illustrated in the process diagrams of Figs. 6 and 7, Ho requires that all input be
3 completed prior to a search and presentation of Chinese characters. Accordingly,
4 Ho does not "present[] likely language characters based on the input string" and
5 "facilitat[e] continued entry of the input string and selection of a suitable language
6 character without switching modes between input and selection."

7 Applicant respectfully requests allowance of claim 29.

8 **Dependent claims 31-32 and 36** depend from claim 29 and are allowable
9 by virtue of this dependency. Claims 31 and 32 further benefit from the
10 arguments presented above with respect to claims 3 and 19 respectively.

11 **Independent claim 37** requires:

12 receiving an input string entered via a numeric-based keypad
13 where number keys in the keypad have associated letters in an
14 alphabet, the input string being representative of one or more
phonetic characters;

15 converting the input string of phonetic characters to possible
16 language characters that are not part of the alphabet; and

17 presenting the language characters using an index that associates
18 selection keys of the keypad with the language characters, the
19 selection keys being chosen based on whether the letters associated
with the selection keys are likely to follow the phonetic characters
already entered.

20 Ho does not disclose this claimed structure. As noted previously, Ho uses
21 virtual keyboards for input of phonetic symbols. Depressing a key merely selects
22 the one-to-one corresponding item in the virtual keyboard. Ho does not construct
23 a phonetic character by inputting a string of letters from the depressed keys.
24 Hence, Ho is not concerned with whether the next key depressed is further input to
25

1 a string, or selection of a converted character. Therefore, Ho does not disclose
2 "presenting the language characters using an index that associates selection keys
3 of the keypad with the language characters" whereby the selection keys are
4 "chosen based on whether the letters associated with the letters associated with the
5 selection keys are likely to follow the phonetic characters already entered."

6 For these reasons, claim 37 is allowable over Ho and the §102 rejection
7 should be withdrawn.

8 **Dependent claims 39-42** depend from claim 37 and are allowable by virtue
9 of this dependency. Claims 41 and 42 further benefit from the arguments
10 presented above with respect to claims 19 and 7 respectively.

11 **Independent claim 45** defines a method comprising "facilitating entry of
12 phonetic characters via discrete keys of a keypad" and "generating possible
13 language characters intended by the user based on a key sequence entered on the
14 keypad in lieu of converting the phonetic characters to the language characters."

15 Ho does not disclose this method. With Ho's device, a user enters a
16 phonetic character by switching among virtual keyboards and selecting items from
17 the virtual keyboards. Thus, the key sequence may vary even when entering the
18 same phonetic symbol. Once the phonetic character and tone are finally selected,
19 Ho finds the Chinese character in the Chinese-character database 410 that
20 corresponds to the phonetic character and tone from the virtual keyboards kept in
21 database 420. Therefore, Ho does not "generat[e] possible language characters
22 intended by the user based on a key sequence entered on the keypad..." as required
23 by claim 45.

24 For these reasons, claim 37 is allowable over Ho and the §102 rejection
25 should be withdrawn.

1 **Dependent claim 46** depends from claim 45 and is allowable by virtue of
2 this dependency.

3 **Independent claim 47** defines a method comprising:

4 receiving key entries entered via a numeric-based keypad where
5 number keys in the keypad have associated letters;

6 associating strings of key entries with language characters that
7 are different than the letters; and

8 presenting likely language characters intended by the user as the
9 user depresses individual keys.

10 For the reasons given above with respect to claim 21, Ho fails to anticipate
11 the method of claim 47, including "associating strings of key entries with language
12 characters that are different than the letters" and "presenting likely language
13 characters intended by the user as the user depresses individual keys." The §102
14 rejection should be withdrawn.

15 **Dependent claim 48** depends from claim 47 and is allowable by virtue of
16 this dependency.

17
18 **Claim Rejections under 35 U.S.C. §103**

19 The remaining claims are rejected under a set of §103 rejections, all of
20 which rely on Ho as the primary reference. Most of these claims depend from
21 base claims addressed above. Claims 24, 27, 49, and 51 are independent and will
22 be addressed below in more detail.
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24
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1 Ho + Hon

2 Claims 2, 18, 22, 30, and 38 stand rejected under 35 U.S.C. § 103 as being
3 unpatentable over Ho in view of U.S. Publication No. 2001/0044724 to Hon et al.
4 (hereinafter, "Hon"). Applicant respectfully traverses the rejection.

5 Claims 2, 18, 22, 30, and 38 depend from respective independent claims 1,
6 17, 21, 29, and 37. As such, they include the features recited in these base claims.
7 The combination of Ho and Hon fails to teach or suggest the features of these base
8 claims from which the cited claims depend. Ho is primarily cited as teaching the
9 base features, and Hon is cited as teaching use of Chinese Pinyin as phonetic
10 characters and Chinese Hanzi as the language characters.

11 With respect to **dependent claim 2**, neither reference discloses a mobile
12 device in which "the language system [is] configured to facilitate input of the
13 input string and selection of a language character without switching modes
14 between input and selection" as required by claim 1 from which claim 2 depends.
15 Ho specifically teaches operating in two separate modes—input and selection—
16 and the need to switch between them. As shown in the process diagrams of Figs. 6
17 and 7, an input phase is performed first, and then subsequently a selection phase.
18 The user is not permitted to perform selection until switching from the input phase
19 after all input of phonetic symbols is complete, as exhibited by decision block 603
20 in Fig. 6 and decision block 706 in Fig. 7. Essentially, Ho represents the very
21 prior art that Applicant sought to overcome.

22 Hon offers no missing teaching. Accordingly, the combination of Ho and
23 Hon fails to teach or suggest the device of claim 2. Applicant respectfully
24 requests that the §103 rejection of claim 2 be withdrawn.
25

1 With respect to **dependent claim 18**, neither reference discloses a “direct
2 key-based search engine that generates possible language characters that are not
3 part of the alphabet based on a key sequence entered on the keypad” as required
4 by claim 17 from which claim 18 depends. Ho maps phonetic symbols stored in
5 one table to Chinese characters stored in a database. Thus, input of the phonetic
6 symbols correlates to identity of the corresponding Chinese characters. Ho
7 therefore does not teach or suggest use of claimed “direct key-based search engine
8 that generates possible language characters . . . based on a key sequence entered
9 on the keypad.” Indeed, Ho teaches away from the claimed device in that a user
10 can enter different key sequences when toggling and selecting among the virtual
11 keyboards, and yet still result in the same Chinese character.

12 Again, Hon offers no missing teaching. Accordingly, the combination of
13 Ho and Hon fails to teach or suggest the device of claim 18. Applicant
14 respectfully requests that the §103 rejection of claim 18 be withdrawn.

15 With respect to **dependent claim 22**, for the reasons just given, neither
16 reference teaches or suggests “an association module that associates a key
17 sequence with language characters that are not part of the alphabet.”

18 Secondly, neither Ho nor Hon suggest a mobile device having “a display to
19 present the possible language characters as the user depresses individual keys
20 based on the key sequence.” Ho only depicts the Chinese character after all input
21 is complete (see Figs. 6 and 7), not as the user depresses individual keys used to
22 input the phonetic characters. Hon offers no relevant teaching. Accordingly, the
23 combination of Ho and Hon fails to teach or suggest the device of claim 22.

24 With respect to **dependent claim 30**, neither reference teaches or suggests
25 a method that includes “facilitating continued entry of the input string and

1 selection of a suitable language character without switching modes between input
2 and selection” as recited in claim 29 from which claim 30 depends. As noted
3 above for claim 2, Ho discloses a process in which the user must switch modes
4 between input and selection. Hon is silent as to this feature. Accordingly, the
5 combination of Ho and Hon fails to teach or suggest the method of claim 30.

6 With respect to **dependent claim 38**, neither reference teaches or suggests
7 “presenting the language characters using an index that associates selection keys
8 of the keypad with the language characters, the selection keys being chosen based
9 on whether the letters associated with the selection keys are likely to follow the
10 phonetic characters already entered” as recited in claim 37 from which claim 38
11 depends.

12 Ho teaches use of virtual keyboards for input of phonetic symbols.
13 Depressing a key merely selects the one-to-one corresponding item in the virtual
14 keyboard. Ho does not construct a phonetic character by inputting a string of
15 letters from the depressed keys. Hence, Ho is not concerned with whether the next
16 key depressed is further input to a string, or selection of a converted character.
17 Therefore, Ho does not teach or suggest “an index that associates selection keys of
18 the keypad with the language characters” whereby the selection keys are “chosen
19 based on whether the letters associated with the letters associated with the
20 selection keys are likely to follow the phonetic characters already entered.”

21 Hon is silent as to this feature, and thus adds no teaching to Ho. For these
22 reasons, claim 38 is allowable over the cited combination.

Ho + Chang

Claims 6, 24, 26, 33, 49, and 50 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Patent No. 5,987,447 to Chang et al. (hereinafter, "Chang"). Applicant respectfully traverses the rejection.

Chang is cited as teaching a language system that includes a sentence-based search engine. Chang provides no teaching as to a language input system and method for a mobile device.

Dependent claim 6 depends from claim 1, and hence includes the features therein. Ho does not teach or suggest a "language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1. As noted above, Ho requires mode switching between input and selection. Chang fails to add any relevant teaching with respect to this feature. Accordingly, the combination of Ho and Chang fails to teach or suggest the device of claim 6.

Independent claim 24 is amended to clarify that the input string is formed of letters from the alphabet entered by associated number keys on the keypad. As amended, claim 24 defines a mobile device comprising:

a keypad of number keys, the number keys having associated letters of an alphabet;

a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to convert the phonetic characters to language characters that are not part of the alphabet using a statistical language model that utilizes at least one neighboring word in a common; and

a display to present the language characters for user selection.

1 Neither Ho nor Chang teaches or suggests a mobile device having "a
2 language system to receive an input string of letters from the alphabet entered via
3 associated number keys of the keypad, where the input string of letters is
4 representative of one or more phonetic characters" as required by claim 24. In
5 contrast, Ho receives specific phonetic symbols selected from pre-defined virtual
6 keyboards. The user does not enter a string of letters from the keypad to define
7 the phonetic characters. Chang is equally silent as to this feature. For this reason
8 alone, claim 24 is allowable over the cited combination of Ho and Chang.

9 Furthermore, neither reference teaches a mobile device having a language
10 system to "convert the phonetic characters to language characters that are not part
11 of the alphabet using a statistical language model that utilizes at least one
12 neighboring word in a common." The Office admits that Ho does not teach this
13 feature, and thus relies on Chang for this feature. (*Office Action*, page 7).
14 However, the Office fails to describe how this combination would be made or how
15 the references themselves suggest such a combination. Ho would have to be
16 severely modified, much beyond its teachings, in order to implement the system of
17 Chang.

18 Ho teaches a simple database correlation between a pre-defined set of
19 phonetic symbols stored in pre-defined virtual keyboard table 420 and the Chinese
20 characters stored in Chinese-character database 410. (*Ho*, Fig. 4). Ho provides no
21 teaching of a language system that employs a "statistical language model." By
22 using the pre-defined character set and mapping scheme, Ho has no need for such
23 a model. A skilled artisan, given the express teachings of Ho, would not then
24 eliminate this easy lookup technique to employ an entirely different model as
25 taught by Chang.

1 Accordingly, Applicant requests that the §103 rejection be withdrawn. If
2 the rejection is maintained, Applicant requests that the Office provide more
3 description as to how the teachings of these references would be combined.

4 **Dependent claim 26** depends from claim 24 and is allowable by virtue of
5 this dependency.

6 **Dependent claim 33** depends from claim 29, and hence includes the
7 features therein. For the reasons given above with respect to claim 6, the
8 combination of Ho and Chang fails to teach or suggest "facilitating continued
9 entry of the input string and selection of a suitable language character without
10 switching modes between input and selection" as required by claim 33 by virtue of
11 its dependence on claim 29.

12 **Independent claim 49** is amended to clarify that the input string is formed
13 of letters from the alphabet entered by associated number keys on the keypad.
14 Claim 49, as amended, recites a method comprising:

15 receiving an input string of letters entered via a numeric-based
16 keypad where number keys in the keypad have associated letters, the
17 input string of letters being representative of one or more phonetic
characters;

18 converting the input string of letters that represent the phonetic
19 characters to possible language characters based upon a context of at
20 least one word in a sentence within which the input string is a part;
and

21 presenting the possible language characters for selection by the
22 user.
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1 For the reasons given above with respect to claim 24, the Ho/Chang
2 combination does not teach or suggest this method. The §103 rejection should be
3 withdrawn.

4 **Dependent claim 50** depends from claim 49, and is allowable by virtue of
5 this dependency.

6
7 Ho + Kantrowitz

8 Claim 8 is rejected under 35 U.S.C. § 103 as being unpatentable over Ho in
9 view of U.S. Patent No. 6,292,772 to Kantrowitz (hereinafter, "Kantrowitz").
10 Applicant respectfully traverses the rejection.

11 **Dependent claim 8** depends from claim 1 and further requires that the
12 language system include "a character-based bigram language model and a word-
13 based N-gram language model, where $N > 2$." The Office recognizes that Ho does
14 not teach these aspects, but cites Kantrowitz for teaching these aspects. However,
15 Kantrowitz provides no teaching of a device having the language system of claim
16 1, where the language system facilitates "input of the input string and selection of
17 a language character without switching modes between input and selection."
18 Additionally, the combination is improper as there is no suggestion in Ho or
19 Kantrowitz to modify the lookup technique of Ho to implement the claimed
20 bigram language model and word-based N-gram language model. Accordingly,
21 the combination of Ho and Kantrowitz fails to teach the device of claim 8. For
22 these reasons, claim 8 should be allowed.

Ho + Kiraz

Claims 12-13, 34-35, and 43-44 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Patent No. 6,307,541 to Kiraz (hereinafter, "Kiraz"). Applicant respectfully traverses the rejection.

Dependent claims 12-13, 34-35, and 43-44 depend respectively from claims 1, 29, and 37. The Office recognizes that Ho does not teach the language system defined in these dependent claims, but cites Kiraz for their teaching. However, Kiraz fails to provide any of the teaching absent from Ho as to the devices and methods of base claims 1, 29, and 37. Accordingly, the combination fails to teach or suggest the claims 12-13, 34-35, and 43-44.

Additionally, it is unclear how the teachings of Kiraz would be implemented in Ho. Ho teaches a simple database correlation between a pre-defined set of phonetic symbols stored in pre-defined virtual keyboard table 420 with Chinese characters stored in Chinese-character database 410. (Ho, Fig. 4). It is unclear how the complex speech recognition system would be implemented in Ho without destroying the basic concepts of Ho. Accordingly, if this rejection is maintained, Applicant requests that the Office provide more information as to how this combination is suggested by the references and would thereby ultimately be made by the skilled artisan.

Ho + Matsuzuka

Claims 14, 27, and 51 are rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Patent No. 5,838,972 to Matsuzuka et al. (hereinafter, "Matsuzuka"). Applicant respectfully traverses the rejection.

1 **Dependent claim 14** depends from claim 1, and hence includes the features
2 therein. Ho does not teach or suggest the aspects of claim 1, including a
3 "language system being configured to facilitate input of the input string and
4 selection of a language character without switching modes between input and
5 selection." Matsuzuka fails to add any relevant teaching with respect to this
6 feature. Accordingly, the combination of Ho and Matsuzuka fails to teach or
7 suggest the device of claim 14.

8 **Independent claim 27** defines a system comprising:

9 a resident language model residing on a mobile device to convert
10 phonetic characters input into the mobile device into language
11 characters using a first statistical language model; and

12 a nonresident language model residing on a server remote from
13 the mobile device, the nonresident language model being configured
14 to convert the phonetic characters into the language characters using
15 a second statistical language model.

16 The cited combination of Ho and Matsuzuka fails to teach or suggest the
17 claimed system. First, neither Ho nor Matsuzuka teaches a "resident language
18 model residing on a mobile device to convert phonetic characters input into the
19 mobile device into language characters using a first statistical language model."
20 As noted above, Ho does not employ a statistical language model. Matsuzuka
21 fails to provide any teaching of a "mobile device to convert phonetic characters
22 input into the mobile device into language characters using a first statistical
23 language model." For this reason alone, claim 27 is allowable.

24 Secondly, neither Ho nor Matsuzuka teaches a system with *both* a "resident
25 language model residing on a mobile device" and "a nonresident language model
residing on a server remote from the mobile device." Ho describes a mobile

1 device, and Matsuzuka refers to a remote server model where a language model is
2 executed on a remote server, rather than the client. However, neither reference
3 teaches that the two could or should be used together such that one language
4 model resides on the mobile device and the second language model resides on the
5 server. Indeed, without Applicant's claim as a roadmap, there is no express
6 teachings in Ho and Matsuzuka that would even suggest such a combination. For
7 this additional reason, claim 27 is allowable.

8 **Independent claim 51 defines a method comprising:**

9 receiving an input string entered via a keypad on a mobile
10 device;

11 sending the input string to a remote server;

12 generating likely language characters based on the input string at
13 the remote server; and

14 returning the likely language characters to the mobile device for
15 display.

16 For similar reasons noted above with respect to claim 27, the
17 Ho/Matsuzuka combination fails to teach or suggest this method.

18
19 **Ho + Chang + Hon**

20 Claim 25 is rejected under 35 U.S.C. § 103 as being unpatentable over Ho
21 in view of Chang and further in view of Hon. Applicant respectfully traverses the
22 rejection.

23 **Dependent claim 25** depends from claim 24, and hence requires "a
24 language system to receive an input string of letters from the alphabet entered via
25 associated number keys of the keypad, where the input string of letters is

1 representative of one or more phonetic characters, and to convert the phonetic
2 characters to language characters that are not part of the alphabet using a statistical
3 language model that utilizes at least one neighboring word in a common
4 sentence.”

5 Ho, Chang, or Hon, taken alone or in combination, fails to teach or suggest
6 the claimed device. For these reasons, claim 25 should be allowed.

7
8 Ho + Matsuzuka + Kantrowitz

9 Claim 28 is rejected under 35 U.S.C. § 103 as being unpatentable over Ho
10 in view of Matsuzuka and further in view of Kantrowitz. Applicant respectfully
11 traverses the rejection.

12 **Dependent claim 28** depends from claim 27. For the reasons given above,
13 Ho and Matsuzuka fail to teach the system of claim 27. Kantrowitz does not offer
14 any of the missing teaching. Accordingly, the combination of Ho, Matsuzuka, and
15 Kantrowitz does not suggest the system of dependent claim 28.

16
17 New Claims

18 New claims 52-60 are believed to be allowable over the cited art of record.
19 Applicant respectfully requests consideration and allowance.
20
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25

Conclusion

Claims 1-60 are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of the subject application. If any issue remains unresolved that would prevent allowance of this case, the Examiner is requested to contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

Date: Oct. 5, 2004By: 

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